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**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/248,935 05/25/94 BATES

J 957X7

BELL, B EXAMINER

D1M1/1128

GEORGE L. CRAIG
MARTIN MARIETTA ENERGY SYSTEMS, INC.
P. O. BOX 2009
OAK RIDGE, TN 37831-8243

ART UNIT PAPER NUMBER

3

1102

DATE MAILED: 11/28/94

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 27-29 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 27-29 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with Informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Serial Number: 08/248935

-2-

Art Unit: 1102

Drawings

The applicants are requested to supply the drawings as supplied in the parent application S.N. 921538, now U.S. Patent No. 5338625, which are missing from the present divisional application.

Specification

1. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the invention, as failing to adequately teach how to make and/or use the invention, for failing to present the best mode of carrying out the invention and for failing to provide support for the invention as is claimed.

The specification as written does not disclose what the optically transparent materials are that are used for the anode, cathode, electrochromic layer and the electrolyte layer. The only recitation to an electro-optic device appears at page 8,

Serial Number: 08/248935

-3-

Art Unit: 1102

line 17-24. There has not been found by the examiner anything to suggest that the electrodes and electrochromic layer of the thin layered battery disclosed in the specification are the same materials as those used in the electro optical device and that these materials are in fact optically transparent. There is also no disclosure that the electrolyte of oxynitride lithium is optically transparent, even though the applicants specification disclose that it may be used in an electro-optical device. There is also no discussion of the particular order in which the layers are laid down with respect to the electro-optical device.

Claim Rejections - 35 USC § 112

2. Claims 27-29 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.
3. Claims 27-29 are rejected under 35 U.S.C. § 112, first paragraph, as the disclosure is enabling only for claims limited an anode, an electrolyte, a cathode and an electrochromic layer which may or may not be optically transparent. See M.P.E.P. §§ 706.03(n) and 706.03(z).

Allowable Subject Matter

4. Claim 27 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. § 112.

Serial Number: 08/248935

-4-

Art Unit: 1102

5. Claims 28-29 would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112 and to include all of the limitations of the base claim and any intervening claims.
6. Claims 27-29 are allowable over the prior art of record.
7. The following is an Examiner's statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach the key feature of the applicants instant invention which is an electrolyte containing nitrogen which is used to form the electrochromic device. The addition of nitrogen into the solid electrolyte significantly increases the conductivity. Therefore, even though the construction of the electrochromic device is the same as those of the prior art inventions, the use of an electrolyte utilizing nitrogen to increase the conductivity is not known.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cheshire (5206756) teaches an electrochromic device which comprises two conductive electrodes separated by a solid electrolyte and an electrochromic material. The device is shown to use optically transparent materials in its construction.

Lampert discloses an electrochromic optical switching device which is layered in the following order: a transparent electrical

Serial Number: 08/248935

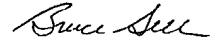
-5-

Art Unit: 1102

conductor, an electrochromic layer, an ionically conductive insulating layer (electrolyte), an organo-sulfur electrode layer, and a transparent conductor layer.

The above prior art however, does not disclose the use of an electrolyte containing nitrogen to increase the conductivity.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce Bell whose telephone number is (703) 308-2527.



Bruce Bell
Patent Examiner
Art Unit 1102

BFB
November 21, 1994

08/248935

A



REQUEST FOR FILING A PATENT APPLICATION UNDER 37 CFR 1.60

(2-92)

DOCKET NUMBER	ANTICIPATED CLASSIFICATION OF THIS APPLICATION		PRIOR APPLICATION EXAMINER	ART UNIT
1057-X-7	CLASS 29	SUBCLASS 280	S. Barts	1204

Address to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

This is a request for filing a ☐ continuation ☒ divisional application under 37 CFR 1.60, of pending prior application number 07/921,538 filed on July 29, 1992 entitled THIN FILM BATTERY AND METHOD FOR MAKING SAME.

1. Enclosed is a copy of the latest inventor-signed prior application, including a copy of the oath or declaration showing the original signature or an indication it was signed. I hereby verify that the attached papers are a true copy of the latest signed prior application number 07/921,538, and further that all statements made herein of my own knowledge are true; and further that these statements were made with the knowledge that willful false statements and the like are made punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful statements may jeopardize the validity of the application or any patent issuing thereon.

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
TOTAL CLAIMS	3	- 20 =	0	x \$22.00 =	\$.00
INDEPENDENT CLAIMS	1	- 3 =	0	x \$74.00 =	\$.00
MULTIPLE DEPENDENT CLAIMS (if applicable)				x\$230.00 =	.00
				BASIC FEE	\$ 710.00
				Total of above Calculations =	\$ 710.00
Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28)					
TOTAL					\$ 710.00

2. ☐ A verified statement to establish small entity status under 37 CFR 1.9 and 1.27
☐ is enclosed.
☐ was filed in prior application number ____/____ and such status is still proper and desired (37 CFR 1.28(a)).
3. ☒ The Commissioner is hereby authorized to charge any fees which may be required under 37 CFR 1.16 and 1.17, or credit any overpayment to Deposit Account No. 13-1958. A duplicate of this sheet is enclosed.
4. ☐ A check in the amount of \$_____ is enclosed.

(2-92)

[Page 1 of 2]

Patent and Trademark Office;
U.S. DEPARTMENT OF COMMERCE



(REQUEST FOR FILING A PATENT APPLICATION UNDER 37 CFR 1.60, PAGE 2)

(2-92)

5. ☒ Cancel in this application original claims 1-26 and 30 of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
6. ☒ Amend the specification by inserting before the first line the sentence:
"This application is a ☐ continuation ☒ division of application number 07/921,538 filed July 29, 1992 (status, abandoned, pending, etc.)."
7. ☐ Transfer the drawings from the pending prior application to this application and abandon said prior application as of the filing date accorded this application. A duplicate copy of this sheet is enclosed for filing in the prior application. (May only be used if signed by person authorized by 37 CFR 1.138 and before payment of issue fee).
8. ☐ New formal drawings are enclosed.
9. ☐ Priority of foreign application number _____, filed on _____ in _____ is claimed under 35 U.S.C. 119.
☐ The certified copy has been filed in prior application number ____/____ and filed _____.
10. ☒ A preliminary amendment is enclosed.
11. ☒ The prior application is assigned of record to Martin Marietta Energy Systems, Inc.
12. ☒ Also enclosed:
13. ☒ The power of attorney in the prior application is to: George L. Craig.
 - a. ☒ The Power of attorney appears in the original papers in the prior application.
 - b. ☐ Since the power does not appear in the original papers, a copy of the power in the prior application is enclosed.
 - c. ☒ Address all future correspondence to: (May only be completed by application, or attorney or agent of record.)

George L. Craig, Esq.
Martin Marietta Energy Systems, Inc.
Post Office Box 2009
Oak Ridge, Tennessee 37831-8243
Registration No. 29,293

24 May 1994
Date

George L. Craig
Signature

George L. Craig, Reg. No. 29,293
Typed or printed name

- ☐ Inventor(s)
☐ Assignee of complete interest
☒ Attorney or agent of record
☐ Filed under 37 CFR 1.34(a)
Registration number of acting under 37 CFR 1.34(a) _____

(2-92)

[Page 1 of 2]

Patent and Trademark Office;
U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 1992

Application or Docket Number

248935

CLAIMS AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA
BASIC FEE		
TOTAL CLAIMS	3 minus 20 =	*
INDEPENDENT CLAIMS	1 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT		

SMALL ENTITY

RATE	FEE
	\$355.00
x\$11=	
x 37=	
+115=	
TOTAL	

OR OTHER THAN SMALL ENTITY

RATE	FEE
	\$710.00
x\$22=	
x 74=	
+230=	
TOTAL	710

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

AMENDMENT A	(Column 1)	(Column 2)	(Column 3)	(Column 4)	(Column 5)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	
Total	* 2	Minus	** 20	=	—
Independent	* 1	Minus	*** 3	=	—
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					

SMALL ENTITY

RATE	ADDITIONAL FEE
x\$11=	
x 37=	
+ 115=	
TOTAL	
ADDIT. FEE	

OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
x\$22=	
x 74=	
+230=	
TOTAL	
ADDIT. FEE	

AMENDMENT B	(Column 1)	(Column 2)	(Column 3)	(Column 4)	(Column 5)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	
Total	*	Minus	**	=	
Independent	*	Minus	*** Same	=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					

RATE	ADDITIONAL FEE
x\$11=	
x 37=	
+ 115=	
TOTAL	
ADDIT. FEE	

RATE	ADDITIONAL FEE
x\$22=	
x 74=	
+ 230=	
TOTAL	
ADDIT. FEE	

AMENDMENT C	(Column 1)	(Column 2)	(Column 3)	(Column 4)	(Column 5)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	
Total	*	Minus	**	=	
Independent	*	Minus	***	=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					

RATE	ADDITIONAL FEE
x\$11=	
x 37=	
+115=	
TOTAL	
ADDIT. FEE	

RATE	ADDITIONAL FEE
x\$22=	
x 74=	
+230=	
TOTAL	
ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

FORM PTO-875
(Rev.10-92)

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

CONTINUITY DATA

PCT/FOREIGN APPLICATION DATA

☆ U.S.G.P.O.: 1994 - 365-974

²
~~28~~. The electro-optical device of Claim ¹~~27~~ wherein said electrolyte has the composition $\text{Li}_x\text{PO}_y\text{N}_z$ where x has an approximate value of 2.8, $2y + 3z$ has an approximate value of 7.8 and z has a value between 0.16 and 0.46.

³
~~29~~. The electro-optical device of Claim ¹~~27~~ wherein said cathode is comprised of vanadium oxide having a fine-grain morphology.

30. A macroelectrochemical cell comprising a plurality of series connected electrochemical cells made according to Claim 8.

15

4. The cell of Claim 1 wherein the third conductive material is a metal oxide having an amorphous fine-grain morphology.

5. The cell of Claim 4 wherein the diameter of said grain is less than 1 micron.

6. The cell of Claim 1 wherein said electrolyte is an amorphous lithium phosphorus oxynitride.

7. The cell of Claim 1 wherein the electrolyte has the composition $\text{Li}_x\text{P}_y\text{O}_z\text{N}_w$, where x has an approximate value of 2.8, $2y + 3z$ has an approximate value of 7.8 and z has a value between 0.16 and 0.46.

8. A method for making a thin-film electrochemical cell comprising the steps of:

a) depositing a first and a second horizontally displaced film of electrically conductive material on a substrate surface such that a portion said substrate surface separates said first and second films, said first film larger than said second film;

b) depositing a third film of electrically conductive material on said first film;

c) depositing a fourth film of an electrolyte having nitrogen contained therein on said third film to overlap said third film, the overlap of said fourth film extending

onto said first film and partially onto said portion of said substrate separating said first and second films; and

15 d) depositing a fifth film of electrically conductive material over the remainder of said substrate separating said first and second films and over substantially all of said second and said fourth films.

9. The method of Claim 8 wherein said third film of electrically conductive material is an amorphous metal oxide.

10. The method of Claim 8 wherein the electrolyte has the composition $\text{Li}_x\text{PO}_3\text{N}_y$, where x has an approximate value of 2.8, $2y + 3z$ has an approximate value of 7.8 and z has a value between 0.16 and 0.46.

11. The method of Claim 8 wherein all films but said fourth film are deposited by a technique selected from the group consisting of reactive dc magnetron sputtering, rf magnetron sputtering, diode sputtering, and thermal
5 evaporation.

12. The method of Claim 8 wherein the fourth film is deposited by a technique selected from the group consisting of rf magnetron sputtering, diode sputtering, and thermal evaporation.

13. An electrolyte for an electrochemical cell comprising a material having nitrogen contained therein.

14. The electrolyte of Claim 13 wherein said material is lithium phosphorus oxynitride.

15. The electrolyte of Claim 13 comprising the composition $\text{Li}_x\text{PO}_y\text{N}_z$, where x is approximately equal to 2.8, $2y + 3z$ is approximately equal to 7.8 and z has a value between 0.16 and 0.46.

16. A method for making an amorphous electrolyte for an electrochemical cell comprising the steps of:

a) selecting a sputtering apparatus for deposition of thin films;

5 b) selecting a target material for sputtering in said sputtering apparatus;

c) selecting a process gas for operation in said sputtering apparatus;

10 d) operating said sputtering apparatus at a total gas pressure of 20 milliTorr and a total gas flow rate of at least 14 sccm; and

e) depositing said electrolyte at an average rate of 8 Angstroms per minute.

17. The method of Claim 16 wherein said sputtering apparatus is chosen from the group consisting of rf magnetron sputterers and diode sputterers.

18. The method of Claim 16 wherein said sputtering target material is lithium orthophosphate.

19. The method of Claim 16 wherein said process gas is a pure Nitrogen gas.

20. A cathode for a thin-film electrochemical cell comprising an amorphous metal-oxide having a fine-grain morphology.

21. The cathode of Claim 20 wherein the diameter of said grain is less than 1 micron.

22. The cathode of Claim 20 wherein said metal-oxide is VO_x where x is a real number approximately equal to 2.5.

23. A method of making a cathode for a thin-film electrochemical cell comprising the steps of:

- a) selecting an unused sputtering target for use in a sputtering apparatus;
- b) selecting a process gas mixture for operation in the sputtering apparatus;

PATENT APPLICATION SERIAL NO. 08/248935

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

DF11076 06/08/94 08248935

13-1958 110 101

710.00CH 957-X-7

PTO-1556
(5/87)

COMBINED DECLARATION FOR PATENT APPLICATION
AND
POWER OF ATTORNEY

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

THIN FILM BATTERY AND METHOD FOR MAKING SAME

the specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby appoint the following attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Harold W. Adams	Registration No. 19,101
George L. Craig	Registration No. 29,293
Ivan L. Ericson	Registration No. 29,302
J. Donald Griffin	Registration No. 25,730
Herman L. Holsopple	Registration No. 25,632
Joseph A. Marasco	Registration No. 32,798
Preston H. Smirman	Registration No. 35,365
James M. Spicer	Registration No. 26,096

All of: Martin Marietta Energy Systems, Inc.
Post Office Box 2009
Oak Ridge, Tennessee 37831-8243

Direct all correspondence and telephone calls to George L. Craig at (615) 576-9676.


I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1-00
Full name of first inventor: John B. Bates
Inventor's signature: John B. Bates Date: 7/29/92
Residence: Oak Ridge, Tennessee
Citizenship: USA TN
Post Office Address: 116 Baltimore Drive, Oak Ridge, Tennessee 37830

2-00
Full name of second inventor: Nancy J. Dudney
Inventor's signature: Nancy J. Dudney Date: 7/29/92
Residence: Knoxville, Tennessee TN
Citizenship: USA
Post Office Address: 11634 Monticello Road, Knoxville, Tennessee 37922

3-00
Full name of third inventor: Greg R. Gruzalski
Inventor's signature: Greg R. Gruzalski Date: 7/29/92
Residence: Oak Ridge, Tennessee TN
Citizenship: USA
Post Office Address: 118 Monticello Road, Oak Ridge, Tennessee 37830

4-00
Full name of fourth inventor: Christopher F. Luck
Inventor's signature: Christopher F. Luck Date: 7-29-92
Residence: Knoxville, Tennessee TN
Citizenship: USA
Post Office Address: 904 Ponder Road, Knoxville, Tennessee 379823

BAR CODE LABEL 		U.S. PATENT APPLICATION			
SERIAL NUMBER 08/248,935		FILING DATE 05/25/94 RULE 60	CLASS 029	GROUP ART UNIT 3206	
APPLICANT	JOHN B. BATES, OAK RIDGE, TN; NANCY J. DUDNEY, KNOXVILLE, TN; GREG R. GRUZALSKI, OAK RIDGE, TN; CHRISTOPHER F. LUCK, KNOXVILLE, TN.				
	CONTINUING DATA*** VERIFIED THIS APPLN IS A DIV OF 07/921,538 07/29/92 PAT 5,338,625				
	FOREIGN/PCT APPLICATIONS*** VERIFIED				
FOREIGN FILING LICENSE GRANTED 06/20/94					
STATE OR COUNTRY TN	SHEETS DRAWING 0	TOTAL CLAIMS 3	INDEPENDENT CLAIMS 1	FILING FEE RECEIVED \$710.00	ATTORNEY DOCKET NO. 957X7
ADDRESS	GEORGE L. CRAIG MARTIN MARIETTA ENERGY SYSTEMS, INC. P. O. BOX 2009 OAK RIDGE, TN 37831-8243				
TITLE	THIN FILM BATTERY AND METHOD FOR MAKING SAME				
This is to certify that annexed hereto is a true copy from the records of the United States Patent and Trademark Office of the application which is identified above. By authority of the COMMISSIONER OF PATENTS AND TRADEMARKS					
Date		Certifying Officer			

S THIN AND FILM AND BATTERY
321232 THIN
245803 FILM
84166 BATTERY

9/1/94

L1 4697 THIN AND FILM AND BATTERY
=> S THIN WITH FILM WITH BATTERY
321232 THIN
245803 FILM

84166 BATTERY
L2 34 THIN WITH FILM WITH BATTERY
(THIN(1W)FILM(1W)BATTERY)
=> D L2 1-34

- (1.) 5,342,709, Aug. 30, 1994, Battery utilizing ceramic membranes; Mark S. Yahnke, et al., 429/162, 247 [IMAGE AVAILABLE]
- (2.) 5,338,625, Aug. 16, 1994, **Thin** **film** **battery** and method for making same; John B. Bates, et al., 429/193, 127 [IMAGE AVAILABLE]
3. 5,215,821, Jun. 1, 1993, Solid-state electrochromic device with proton-conducting polymer electrolyte and Prussian blue counterelectrode; Kuo-Chuan Ho, 428/432; 359/268, 269, 275; 428/688, 689, 697 [IMAGE AVAILABLE]
4. 5,208,121, May 4, 1993, Battery utilizing ceramic membranes; Mark S. Yahnke, et al., 429/162, 247 [IMAGE AVAILABLE]
5. 5,202,201, Apr. 13, 1993, Composite element having a titanium chalcogenide or oxychalcogenide layer, more particularly usable as the positive electrode in a thin film electrochemical cell; Georges Meunier, et al., 429/193; 204/192.15, 192.29; 359/265, 273; 428/689, 698, 701; 429/218 [IMAGE AVAILABLE]
6. 5,114,809, May 19, 1992, All solid-state lithium secondary battery; Yoshifumi Nakacho, et al., 429/192, 218 [IMAGE AVAILABLE]
7. 5,110,696, May 5, 1992, Rechargeable lithiated thin film intercalation electrode battery; Frough K. Shokoohi, et al., 429/218; 29/623.5; 423/594, 599, 641; 427/372.2; 429/224 [IMAGE AVAILABLE]
8. 5,110,694, May 5, 1992, Secondary Li battery incorporating 12-Crown-4 ether; Ganesan Nagasubramanian, et al., 429/192; 252/62.2 [IMAGE AVAILABLE]
9. 5,103,851, Apr. 14, 1992, Solar battery and method of manufacturing the same; Shoji Nishida, et al., 136/249, 258; 437/4, 89 [IMAGE AVAILABLE]
10. 5,100,821, Mar. 31, 1992, Semiconductor AC switch; Gary V. Fay, 437/47; 29/623.5; 429/7 [IMAGE AVAILABLE]
11. 5,030,331, Jul. 9, 1991, Process for preparing iridium oxide film; Yoshiyuki Sato, 205/107; 204/192.15; 205/188, 224; 427/585 [IMAGE AVAILABLE]
12. 5,011,751, Apr. 30, 1991, Electrochemical device; Sachiko Yoneyama,

et al., 429/192, 247 [IMAGE AVAILABLE]

13. 5,006,737, Apr. 9, 1991, Transformerless semiconductor AC switch having internal biasing means; Gary V. Fay, 307/571, 254, 296.1, 296.5, 311 [IMAGE AVAILABLE]

14. 4,977,007, Dec. 11, 1990, Solid electrochemical element and production process therefor; Shigeo Kondo, et al., 428/76; 264/104; 428/209, 323, 375, 408, 480, 516, 522; 429/127, 193, 217 [IMAGE AVAILABLE]

15. 4,936,924, Jun. 26, 1990, **Thin**--**film** solar **battery** and its manufacturing method; Takahiko Inuzuka, 136/249; 437/2, 4 [IMAGE AVAILABLE]

16. 4,892,594, Jan. 9, 1990, Photovoltaic element; Ryoji Fujiwara, et al., 136/258; 257/53, 458, 749 [IMAGE AVAILABLE]

17. 4,876,628, Oct. 24, 1989, Thin film ion conducting coating; Ronald B. Goldner, et al., 361/313; 429/104 [IMAGE AVAILABLE]

18. 4,865,428, Sep. 12, 1989, Electrooptical device; Dennis A. Corrigan, 359/275 [IMAGE AVAILABLE]

19. 4,832,463, May 23, 1989, Thin film ion conducting coating; Ronald B. Goldner, et al., 359/275, 270 [IMAGE AVAILABLE]

20. 4,740,431, Apr. 26, 1988, Integrated solar cell and battery; Roger G. Little, 429/9; 136/244, 291 [IMAGE AVAILABLE]

21. 4,722,877, Feb. 2, 1988, Long cycle life solid-state solid polymer electrolyte cells; Anthony F. Sammells, 429/192, 218 [IMAGE AVAILABLE]

22. 4,689,874, Sep. 1, 1987, Process for fabricating a **thin**--**film** solar **battery**; Masaharu Nishiura, 437/2; 136/244, 258; 437/7, 181, 226 [IMAGE AVAILABLE]

23. 4,672,586, Jun. 9, 1987, Semiconductor memory having circuit effecting refresh on variable cycles; Katsuhiko Shimohigashi, et al., 365/229, 189.09 [IMAGE AVAILABLE]

24. 4,645,726, Feb. 24, 1987, Solid state lithium battery; Masahiko Hiratani, et al., 429/191, 218 [IMAGE AVAILABLE]

25. 4,624,045, Nov. 25, 1986, Method of making thin film device; Shinichiro Ishihara, et al., 437/2; 136/244, 249, 258; 257/53; 437/51, 181 [IMAGE AVAILABLE]

26. 4,572,873, Feb. 25, 1986, Titanium disulfide thin film and process for fabricating the same; Keiichi Kanehori, et al., 428/432; 427/126.1, 255, 255.1; 428/698, 701 [IMAGE AVAILABLE]

27. 4,555,636, Nov. 26, 1985, Pattern detector; Hakubun Fujisawa, et al., 250/208.1; 257/443, 926; 348/294 [IMAGE AVAILABLE]

28. 4,555,456, Nov. 26, 1985, Cathode structure for **thin** **film** **battery**; Keiichi Kanehori, et al., 429/131, 218 [IMAGE AVAILABLE]

29. 4,181,619, Jan. 1, 1980, Antiwear composition; Robert H. Schmitt, et al., 252/32.5, 33, 75, 389.21 [IMAGE AVAILABLE]
30. 3,939,008, Feb. 17, 1976, Use of perovskites and perovskite-related compounds as battery cathodes; John M. Longo, et al., 429/206, 221, 223, 224, 229 [IMAGE AVAILABLE]
31. 3,928,067, Dec. 23, 1975, Polyalkylene glycol ethers in rechargeable lithium nonaqueous batteries; John Broadhead, et al., 429/194, 198, 199, 218 [IMAGE AVAILABLE]
32. 3,864,167, Feb. 4, 1975, Non-aqueous battery using chalcogenide electrode; John Broadhead, et al., 429/194, 199, 218 [IMAGE AVAILABLE]
33. 3,791,867, Feb. 12, 1974, RECHARGABLE NONAQUEOUS BATTERY; John Broadhead, et al., 429/191, 194, 218 [IMAGE AVAILABLE]
34. 3,708,344, Jan. 2, 1973, ORGANIC DEPOLARIZER; Philip Bernstein, 429/201, 213 [IMAGE AVAILABLE]

W

A

12

A

12

AF

P

Paragraph

Thin (W) Film

Film-Thin

Thin Film

Thin (A) Film

Thin Film

```

*
* The APS is available:
* 6:30am - 9:00pm Monday through Friday
* 7:30am - 5:00pm Saturday, Sunday, Holidays
*
* APS is unavailable Thanksgiving Day, Christmas Day,
* and New Year's Day.
*

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*****
FILE 'USPAT' ENTERED AT 11:23:53 ON 20 NOV 94

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*****
* WELCOME TO THE
* U. S. PATENT TEXT FILE
*****

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```

=> s oxynitride lithium
    1564 OXYNITRIDE
    68632 LITHIUM
L1      1 OXYNITRIDE LITHIUM
        (OXYNITRIDE(W)LITHIUM)

```

```

=> d 11 1

```

```

1. 5,338,625, Aug. 16, 1994, Thin film battery and method for
making same; John B. Bates, et al., 429/193, 127 [IMAGE
AVAILABLE]

```

```

=> s transparent anode
    144274 TRANSPARENT
    58810 ANODE
L2      130 TRANSPARENT ANODE
        (TRANSPARENT(W)ANODE)

```

```

=> s transparent cathode
    144274 TRANSPARENT
    82060 CATHODE
L3      29 TRANSPARENT CATHODE
        (TRANSPARENT(W)CATHODE)

```

```

=> s transparent electrochromic
    144274 TRANSPARENT
    1419 ELECTROCHROMIC
L4      33 TRANSPARENT ELECTROCHROMIC
        (TRANSPARENT(W)ELECTROCHROMIC)

```

```

=> s transparent electrolyte
    144274 TRANSPARENT
    30848 ELECTROLYTE
L5      46 TRANSPARENT ELECTROLYTE
        (TRANSPARENT(W)ELECTROLYTE)

```

```

=> s 12 and 13 and 14 and 15
L6      0 L2 AND L3 AND L4 AND L5

```

```

=> s 12 and 13 and 14

```

L7 0 L2 AND L3 AND L4

=> s 12 and 13 and 15

L8 0 L2 AND L3 AND L5

=> s 12 and 13

L9 7 L2 AND L3

=> d 19 1-7

1. 5,061,569, Oct. 29, 1991, Electroluminescent device with organic electroluminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 313/504, 506; 428/515, 690, 917 [IMAGE AVAILABLE]

2. 4,950,950, Aug. 21, 1990, Electroluminescent device with silazane-containing luminescent zone; Robert J. Perry, et al., 313/504, 506; 428/690, 917 [IMAGE AVAILABLE]

3. 4,885,211, Dec. 5, 1989, Electroluminescent device with improved cathode; Ching W. Tang, et al., 428/457; 252/301.16; 313/346R, 498, 504, 506, 507; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

4. 4,769,292, Sep. 6, 1988, Electroluminescent device with modified thin film luminescent zone; Ching W. Tang, et al., 428/690; 313/504; 428/917 [IMAGE AVAILABLE]

5. 4,720,432, Jan. 19, 1988, Electroluminescent device with organic luminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 257/40, 103; 313/498, 504, 506, 509; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

6. 4,360,763, Nov. 23, 1982, Method and device for control of great currents particularly of the pulse type; Michal Gryzinski, 315/111.01; 200/144B; 313/231.01; 315/344 [IMAGE AVAILABLE]

7. 4,045,677, Aug. 30, 1977, Intense ion beam generator; Stanley Humphries, Jr., et al., 250/423R; 315/111.81 [IMAGE AVAILABLE]

=> s 19 and electrochromic
1419 ELECTROCHROMIC

L10 0 L9 AND ELECTROCHROMIC

=> s 19 and lithium

68632 LITHIUM

L11 5 L9 AND LITHIUM

=> d 111 1-5

1. 5,061,569, Oct. 29, 1991, Electroluminescent device with organic electroluminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 313/504, 506; 428/515, 690, 917 [IMAGE AVAILABLE]

2. 4,950,950, Aug. 21, 1990, Electroluminescent device with silazane-containing luminescent zone; Robert J. Perry, et al.,

313/504, 506; 428/690, 917 [IMAGE AVAILABLE]

3. 4,885,211, Dec. 5, 1989, Electroluminescent device with improved cathode; Ching W. Tang, et al., 428/457; 252/301.16; 313/346R, 498, 504, 506, 507; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

4. 4,769,292, Sep. 6, 1988, Electroluminescent device with modified thin film luminescent zone; Ching W. Tang, et al., 428/690; 313/504; 428/917 [IMAGE AVAILABLE]

5. 4,720,432, Jan. 19, 1988, Electroluminescent device with organic luminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 257/40, 103; 313/498, 504, 506, 509; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

=> s 19 and smart window?

2216 SMART
111108 WINDOW?
28 SMART WINDOW?
(SMART(W)WINDOW?)

L12 0 L9 AND SMART WINDOW?

=> s smart window?

2216 SMART
111108 WINDOW?
L13 28 SMART WINDOW?
(SMART(W)WINDOW?)

=> s 113 and anode and cathode

58810 ANODE
82060 CATHODE
L14 2 L13 AND ANODE AND CATHODE

=> d 114 1-2

1. 5,351,151, Sep. 27, 1994, Optical filter using microlens arrays; George S. Levy, 359/240, 237, 252, 256, 259, 275, 276, 282, 284, 419 [IMAGE AVAILABLE]

2. 5,338,625, Aug. 16, 1994, Thin film battery and method for making same; John B. Bates, et al., 429/193, 127 [IMAGE AVAILABLE]

=> s 113 and electrolyte
30848 ELECTROLYTE
L15 14 L13 AND ELECTROLYTE

=> s 115 and lithium
68632 LITHIUM
L16 10 L15 AND LITHIUM

=> s 116 and vanadium oxide
22589 VANADIUM
240069 OXIDE

L7 0 L2 AND L3 AND L4

=> s 12 and 13 and 15
L8 0 L2 AND L3 AND L5

=> s 12 and 13
L9 7 L2 AND L3

=> d 19 1-7

1. 5,061,569, Oct. 29, 1991, Electroluminescent device with organic electroluminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 313/504, 506; 428/515, 690, 917 [IMAGE AVAILABLE]

2. 4,950,950, Aug. 21, 1990, Electroluminescent device with silazane-containing luminescent zone; Robert J. Perry, et al., 313/504, 506; 428/690, 917 [IMAGE AVAILABLE]

3. 4,885,211, Dec. 5, 1989, Electroluminescent device with improved cathode; Ching W. Tang, et al., 428/457; 252/301.16; 313/346R, 498, 504, 506, 507; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

4. 4,769,292, Sep. 6, 1988, Electroluminescent device with modified thin film luminescent zone; Ching W. Tang, et al., 428/690; 313/504; 428/917 [IMAGE AVAILABLE]

5. 4,720,432, Jan. 19, 1988, Electroluminescent device with organic luminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 257/40, 103; 313/498, 504, 506, 509; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

6. 4,360,763, Nov. 23, 1982, Method and device for control of great currents particularly of the pulse type; Michal Gryzinski, 315/111.01; 200/144B; 313/231.01; 315/344 [IMAGE AVAILABLE]

7. 4,045,677, Aug. 30, 1977, Intense ion beam generator; Stanley Humphries, Jr., et al., 250/423R; 315/111.81 [IMAGE AVAILABLE]

=> s 19 and electrochromic
1419 ELECTROCHROMIC
L10 0 L9 AND ELECTROCHROMIC

=> s 19 and lithium
68632 LITHIUM

L11 5 L9 AND LITHIUM

=> d 111 1-5

1. 5,061,569, Oct. 29, 1991, Electroluminescent device with organic electroluminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 313/504, 506; 428/515, 690, 917 [IMAGE AVAILABLE]

2. 4,950,950, Aug. 21, 1990, Electroluminescent device with silazane-containing luminescent zone; Robert J. Perry, et al.,

313/504, 506; 428/690, 917 [IMAGE AVAILABLE]

3. 4,885,211, Dec. 5, 1989, Electroluminescent device with improved cathode; Ching W. Tang, et al., 428/457; 252/301.16; 313/346R, 498, 504, 506, 507; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

4. 4,769,292, Sep. 6, 1988, Electroluminescent device with modified thin film luminescent zone; Ching W. Tang, et al., 428/690; 313/504; 428/917 [IMAGE AVAILABLE]

5. 4,720,432, Jan. 19, 1988, Electroluminescent device with organic luminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 257/40, 103; 313/498, 504, 506, 509; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

=> s l9 and smart window?

2216 SMART

111108 WINDOW?

28 SMART WINDOW?

(SMART(W)WINDOW?)

L12 0 L9 AND SMART WINDOW?

=> s smart window?

2216 SMART

111108 WINDOW?

L13 28 SMART WINDOW?

(SMART(W)WINDOW?)

=> s l13 and anode and cathode

58810 ANODE

82060 CATHODE

L14 2 L13 AND ANODE AND CATHODE

=> d l14 1-2

1. 5,351,151, Sep. 27, 1994, Optical filter using microlens arrays; George S. Levy, 359/240, 237, 252, 256, 259, 275, 276, 282, 284, 419 [IMAGE AVAILABLE]

2. 5,338,625, Aug. 16, 1994, Thin film battery and method for making same; John B. Bates, et al., 429/193, 127 [IMAGE AVAILABLE]

=> s l13 and electrolyte

30848 ELECTROLYTE

L15 14 L13 AND ELECTROLYTE

=> s l15 and lithium

68632 LITHIUM

L16 10 L15 AND LITHIUM

=> s l16 and vanadium oxide

22589 VANADIUM

240069 OXIDE

L7 0 L2 AND L3 AND L4

=> s 12 and 13 and 15

L8 0 L2 AND L3 AND L5

=> s 12 and 13

L9 7 L2 AND L3

=> d 19 1-7

1. 5,061,569, Oct. 29, 1991, Electroluminescent device with organic electroluminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 313/504, 506; 428/515, 690, 917 [IMAGE AVAILABLE]

2. 4,950,950, Aug. 21, 1990, Electroluminescent device with silazane-containing luminescent zone; Robert J. Perry, et al., 313/504, 506; 428/690, 917 [IMAGE AVAILABLE]

3. 4,885,211, Dec. 5, 1989, Electroluminescent device with improved cathode; Ching W. Tang, et al., 428/457; 252/301.16; 313/346R, 498, 504, 506, 507; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

4. 4,769,292, Sep. 6, 1988, Electroluminescent device with modified thin film luminescent zone; Ching W. Tang, et al., 428/690; 313/504; 428/917 [IMAGE AVAILABLE]

5. 4,720,432, Jan. 19, 1988, Electroluminescent device with organic luminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 257/40, 103; 313/498, 504, 506, 509; 428/411.1, 461, 515, 917 [IMAGE AVAILABLE]

6. 4,360,763, Nov. 23, 1982, Method and device for control of great currents particularly of the pulse type; Michal Gryzinski, 315/111.01; 200/144B; 313/231.01; 315/344 [IMAGE AVAILABLE]

7. 4,045,677, Aug. 30, 1977, Intense ion beam generator; Stanley Humphries, Jr., et al., 250/423R; 315/111.81 [IMAGE AVAILABLE]

=> s 19 and electrochromic
1419 ELECTROCHROMIC

L10 0 L9 AND ELECTROCHROMIC

=> s 19 and lithium

68632 LITHIUM

L11 5 L9 AND LITHIUM

=> d 111 1-5

1. 5,061,569, Oct. 29, 1991, Electroluminescent device with organic electroluminescent medium; Steven A. VanSlyke, et al., 428/457; 252/301.16; 313/504, 506; 428/515, 690, 917 [IMAGE AVAILABLE]

2. 4,950,950, Aug. 21, 1990, Electroluminescent device with silazane-containing luminescent zone; Robert J. Perry, et al.,

* * * * *
=> s (phosphorus or P) (4a) (oxynitride or no) (4a) (lithium or li)
53950 PHOSPHORUS
472558 P

1564 OXYNITRIDE
1462158 NO

68632 LITHIUM
21130 LI

L1 45 (PHOSPHORUS OR P) (4A) (OXYNITRIDE OR NO) (4A) (LITHIUM OR
LI)

=> s 11 and electrolyte
30848 ELECTROLYTE

L2 6 L1 AND ELECTROLYTE
=> d 12 1-6

1. 5,338,625, Aug. 16, 1994, Thin film battery and method for making
same; John B. Bates, et al., 429/193, 127 [IMAGE AVAILABLE]

2. 5,314,765, May 24, 1994, Protective lithium ion conducting ceramic
coating for lithium metal anodes and associate method; John B. Bates,
429/194; 29/623.5; 429/48, 218 [IMAGE AVAILABLE]

3. 5,288,678, Feb. 22, 1994, Indirect potentiometric method and diluent
for analysis of lithium; Frank R. Shu, et al., 436/18; 204/153.15;
436/79, 150, 179 [IMAGE AVAILABLE]

4. 5,114,809, May 19, 1992, All solid-state lithium secondary battery;
Yoshifumi Nakacho, et al., 429/192, 218 [IMAGE AVAILABLE]

5. 5,110,742, May 5, 1992, Indirect potentiometric method and diluent
for analysis of lithium; Frank R. Shu, et al., 436/18; 204/153.15;
436/150, 182 [IMAGE AVAILABLE]

6. 4,961,859, Oct. 9, 1990, Method of treating an aqueous processing
waste solution of a non-silver halide light-sensitive material and a
device therefor; Masafumi Uehara, et al., 210/725; 159/47.3; 203/14;
210/178, 182, 207, 724, 727, 734, 737, 774, 787, 803 [IMAGE AVAILABLE]

=> s 11 and electrochromic
1419 ELECTROCHROMIC
L3 1 L1 AND ELECTROCHROMIC
=> d 13 1

1. 5,338,625, Aug. 16, 1994; Thin film battery and method for making
same; John B. Bates, et al., 429/193, 127 [IMAGE AVAILABLE]

=> s lithium phosphorus oxynitride.

68632 LITHIUM
53950 PHOSPHORUS
1564 OXYNITRIDE

L4 2 LITHIUM PHOSPHORUS OXYNITRIDE
(LITHIUM(W) PHOSPHORUS(W) OXYNITRIDE)

=> d 14 1-2

1. 5,338,625, Aug. 16, 1994, Thin film battery and method for making
same; John B. Bates, et al., 429/193, 127 [IMAGE AVAILABLE]

2. 5,314,765, May 24, 1994, Protective lithium ion conducting ceramic coating for lithium metal anodes and associate method; John B. Bates, 429/194; 29/623.5; 429/48, 218 [IMAGE AVAILABLE]
=> logoff y
U.S. Patent & Trademark Office LOGOFF AT 08:35:41 ON 21 NOV 94

APPLICATION TRANSFER REQUEST

Section I. APPLICATION TRANSFER REQUEST

TO: Receiving A.U. 1111 Class/sub 42929 Date 8/29 S.N. 240735FROM: Originating A.U. 3206 Class/sub 29 Examiner Heal

REASON:

☐ Request for Reconsideration
(Return to Classification)*claims 27-29 are not here*

Section II. DISPOSITION BY RECEIVING A.U.

☒ Accepted (keep in receiving A.U.)Not Accepted ☐ Forward to Chem. Doc. Date 6/30/94 Extr. W. 11.5☐ Return to Originating A.U.

Classification Group

Nonclassification issue only:

☐ Restriction☐ Other

REASON:

Appears to be 359/2651 for electronic cells

Section III. DISPOSITION BY

☒ Transfer Approved-Forward to A.U. 1111 Class/sub 42929 Date 8/29/94 Classifier TFM/EL/17☐ Transfer Disapproved-Forward to Originating A.U. 1111 Concurring J. S. P. 100

REASON:

Nonclassification issue raised:

☐ Restriction☐ Other*Appears appropriate. Please
forward to 359/2651*

APPLICATION TRANSFER REQUEST

Section I. APPLICATION TRANSFER REQUEST

TO: Receiving ~~App~~ *Chem. Doc.* Date *9/6/94* S.N. *08/248,935*
 FROM: Originating A.U. *1111* Class/sub *1111* Examiner *1111*
 REASON: *Claims 1-26 and 30 have been cancelled. The only claims under consideration are claims 27-29. The claims are not directed to the film battery. Please reconsider 359/265+ as a place for these claims.*

☒ Request for Reconsideration
 (Return to Classification)

Section II. DISPOSITION BY RECEIVING A.U.

☐ Accepted (keep in receiving A.U.)

Not Accepted ☐ Forward to

☐ Return to Originating A.U.

Classification Group

Nonclassification issue only:

☐ Restriction

☐ Other

REASON:

Section III. DISPOSITION BY *C/E*

Classification Group.

Date *9/14/94*

☐ Transfer Approved-Forward to A.U.

Class/sub *429*

Classifier *7 Corv7*

☒ Transfer Disapproved-Forward to Originating A.U.

1111

Concurring

Classifier

Nonclassification issue raised:

☐ Restriction

☐ Other

REASON:

All that is recited in claims 27-29 is a thin film battery. No other pertinent structure for 359.

Section I. APPLICATION TRANSFER REQUEST Date 8/22/94 S.N. 08/248,935

FROM: _____
Originating A.U., IIII
Class/sub 429
Examiner _____

The claims under consideration are 27-29 (Return to Classification)

will be cancelled. There is not sufficient battery support. ~~1-26 and 27~~ ^{1-26 and 27}

inventing claims 27-29 to warrant classification
is, where ~~the~~ ^{in 429} I request that

Can you consider the suggested 33 9/265⁺ classification. It goes
out from our with 250 units. It also has a 1000

Section II. DISPOSITION BY RECEIVING A.U. _____
 Date _____
 Provide explanation as to why claims *not* *disposed*
 Ex'r _____

Accepted (keep in receiving A.U.)

Not Accepted ☐ Forward to _____ Classification Group _____

☐ Return to Originating A.U. _____ Nonclassification issue only:

REASON: ☐ Restriction

☐ Other

Section III. DISPOSITION BY C/E Date 9/1/94
Classification Group.

Transfer Approved-Forward to A II	Class/Club	439	Class/Club	439

[illegible]

Minister Disapproved-Forward to Originating A.U. /// Concurring _____

EASON: _____

Classifier _____

REASON: ☒ Nonclassification issue raised: ☐ Restriction ☐ Other

See APS search on their 6'4m batteries.

Search shows there is considerable as it in

429. See e.g. 5114809 5328125 5343409

15.211.001-220023, 2012701.



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER OF
PATENTS AND TRADEMARKS
Washington, D.C. 20231

#9

George L. Craig
Martin Marietta Engergy Systems, Inc.
P.O. Box 2009
Oak Ridge, TN 37831-8243

MAILED
SEP 20 1995
GROUP 1100

Serial No. 08/248,935 :
Filed: May 25, 1994 : DECISION ON PETITION
For: An Electro-Optical Device :
Including A Nitrogen Containing: :
Electrolyte :

This is a decision on the Petition, filed August 14, 1995, to delete Inventors under 37 CFR 1.48.

The Petition is GRANTED.

In view of the papers filed August 14, 1995, it has been found that this application, as filed, through error and without any deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48(a). The Inventorship of this application has been changed by deletion of inventors Christopher F. Luck and Greg R. Gruzalski.

The Petition is GRANTED.

The application is being forwarded to Application Branch for correction of data on the front jacket of the file.

John Niebling
Supervisory Primary Examiner
Patent Examining Group 1100



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Divisional patent application
of Parent Patent Application
Serial No. 07/921,538 filed
July 29, 1992, and issued
August 16, 1994 as U.S.
Patent No. 5, 338, 625

70-5/12/95
100-5/14/8
M.H.
9/20/95
RECEIVED

AUG 23 1995

GROUP 1100

Applicants: John B. Bates
Nancy J. Dudney

Docket No.: 957-X-7

Serial No.: 08/248,935

Examiner: B. Bell

Filing Date: June 29, 1994

Art Unit: 1102

Title: **A ELECTRO-OPTICAL DEVICE**

**PETITION AND FEE DELETING CORRECTLY NAMED ORIGINAL PERSON(S) WHO
ARE NOT INVENTOR(S) OF INVENTION NOW BEING CLAIMED (37 CFR 1.48(b))**

Honorable Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

This petition under 37 CFR 1.48(b) is to delete the names of the following persons originally named as inventors in the parent application and who are not the inventors of the invention now being claimed:

Christopher F. Luck
Greg R. Gruzalski

The claims in this application are as follows:

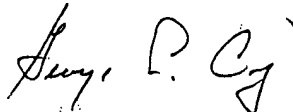
Claims 1-26 and 30 were cancelled and Claims 27-29 remained of the original
Claims 1-30 upon filing this application as a divisional application on May 25, 1994.

This petition is being filed diligently after discovery of any claim(s) for which the above-named inventors, who are now being deleted, are now no longer the inventors of the subject matter being claimed. The facts involved are now set forth as follows:

RECEIVED

In the Office Action on the parent application dated 28 May 1993, the Examiner issued a restriction to the filed claims under 35 USC 121 as follows: Group I (Claims 1-7 and 30) drawn to an electrochemical cell; Group II (Claims 8-12) drawn to a method for making an electrochemical cell; Group III (Claims 13-15) drawn to an electrolyte; Group IV (Claims 16-19) drawn to a method for making an electrolyte; Group V (Claims 20-22) drawn to a cathode; Group VI (Claims 23-26) drawn to a method of making a cathode; and Group VII (Claims 27-29) drawn to an electro-optical device. Accordingly, Applicants cancelled Claims 8-29 and elected to first prosecute the claims of Group I. Applicants also filed divisional applications on each of the other Groups of Claims. In the present application directed to the Group VII Claims, upon cancellation of the non-elected Claims 1-26 and 30, Christopher F. Luck and Greg R. Gruzalski are no longer inventors of the remaining claims 27-29. Therefore, this formal petition to delete Christopher F. Luck and Greg R. Gruzalski as inventors is being diligently submitted.

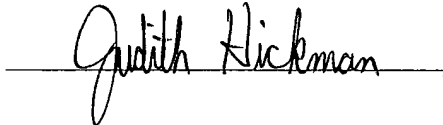
Applicants respectfully submit that this petition for change of inventorship was not the result of error on Applicants' part since the cover sheet of the preliminary amendment and the post card accompanying the amendment and application for filing the divisional application (attached) correctly name the proper inventors of the claimed subject matter. However, if such a petition fee for correction of inventorship should be required, please charge the fee required by 37 CFR 1.17(h) to Deposit Account 13-1958.



George L. Craig, Esq.
Patent Counsel
Reg. No. 29,293
Lockheed Martin Energy Systems, Inc.
Post Office Box 2009
Oak Ridge, Tennessee 37831-8243
Telephone No. (615) 576-9676
Facsimile No. (615) 574-0381

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First-Class Mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231, on August 10, 1995, by Judith Hickman.



RECEIVED
MAY 23 1993
GROUP 1100

DOCKET NO.: 957-X-7
APPLICANTS: John B. Bates and Nancy J. Dudgey
TITLE: AL ELECTRO-OPTICAL DEVICE

Divisional Patent Application of U.S. Patent Application
Serial No. 07/921,538 filed July 29, 1992.

The date-stamping of this card acknowledges receipt of
the following:

- 1) Request for Filing a Patent Application Under
37 CFR 1.60
- 2) Preliminary Amendment
- 3) Copy - U.S. Patent Application Serial No. 07/921,538
- 4) Copy - Combined Declaration and Power of Attorney

08/248935

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Division patent application
U.S. Patent Application Serial
No. 07/921,538 filed 29 July 1992

John B. Bates
Nancy J. Dudney

Docket No.: 957-X-7

Examiner: S. Barts

Art Unit: 1204

Serial No.:

Filing Date:

Title: THIN FILM BATTERY AND
METHOD FOR MAKING SAME

RECEIVED

AUG 23 1992

GROUP 1100

PRELIMINARY AMENDMENT UNDER 37 C.F.R. 1.115

Honorable Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

Submitted herewith is a preliminary amendment under 37 C.F.R. 1.115 requesting that the specification and claims of the present divisional patent application be amended as follows:

In the Specification

Delete the title and substitute --An Electro-Optical Device--.

Page 1, before the first sentence of the first paragraph, insert --This application is a division of application Serial No. 07/921,538, filed 29 July 1992, presently pending.--

In the Claims

Please cancel Claims 1-26 and 30.

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PART B—ISSUE FEE TRANSMITTAL

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to addressee entered in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block 3 below; or (b) providing the PTO with a separate "FEE ADDRESS" for maintenance fee notifications with the payment of Issue Fee or thereafter. See reverse for Certificate of Mailing.

1. CORRESPONDENCE ADDRESS

GEORGE L.
MARTIN MARIETTA ENERGY SYSTEMS, INC.
P. O. BOX 2009
OAK RIDGE, TN 37831-8243

D1M1/0317

2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)

INVENTOR'S NAME

Street Address

City, State and ZIP Code

CO-INVENTOR'S NAME

Street Address

City, State and ZIP Code

☐ Check if additional changes are on reverse side

SERIES CODE/SERIAL NO.

FILING DATE

TOTAL CLAIMS

EXAMINER AND GROUP ART UNIT

DATE MAILED

08/248,935 05/25/94 003 BELL, B 1102 03/17/95

First Named Applicant

DATES,

JOHN D.

TITLE OF INVENTION

AN ELECTRA-OPTICAL DEVICE INCLUDING A NITROGEN CONTAINING ELECTROLYTE (AS AMENDED)

ATTY'S DOCKET NO.

CLASS-SUBCLASS

BATCH NO.

APPLN. TYPE

SMALL ENTITY

FEE DUE

DATE DUE

1 957X7 429-127,000 179 UTILITY NO \$1210.00 06/19/95

3. Correspondence address change (Complete only if there is a change)

Harold W. Adams
Associate General Counsel for Intellectual Property
Lockheed Martin Energy Systems, Inc.
P.O. Box 2009
Oak Ridge, TN 37831-8243

4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR, alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.

1 George L. Craig

2 James M. Spicer

3 Harold W. Adams

DO NOT USE THIS SPACE

TL60730 07/20/95 08248935

TL60731 07/20/95 08248935

13-1958 060 142

13-1958 060 561

1,210.00CH

30.00CH

5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)

(1) NAME OF ASSIGNEE:

Martin Marietta Energy Systems, Inc.

(2) ADDRESS: (CITY & STATE OR COUNTRY)

Oak Ridge, Tennessee

6a. The following fees are enclosed:

☒ Issue Fee ☒ Advance Order - # of Copies 10

6b. The following fees should be charged to:

DEPOSIT ACCOUNT NUMBER 13-1958

(ENCLOSE PART C)

☒ Issue Fee ☒ Advance Order - # of Copies 10

☒ Any Deficiencies in Enclosed Fees

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.

(Authorized Signature)

Paul Smith

(Date)

6/16/95

NOTE: The Issue Fee will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

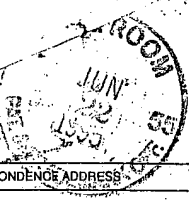
A. ☐ This application is NOT assigned.

☐ Assignment previously submitted to the Patent and Trademark Office.

☒ Assignment is being submitted under separate cover. Assignments should be directed to Box ASSIGNMENTS.

PLEASE NOTE: Unless an assignee is identified in Block 5, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

1. TRANSMIT THIS FORM WITH FEE-CERTIFICATE OF MAILING ON REVERSE



Part C CHARGE TO DEPOSIT ACCOUNT

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1. CORRESPONDENCE ADDRESS

GEORGE L. CRAIG
MARTIN MARIETTA ENERGY SYSTEMS, INC.
P. O. BOX 2009
OAK RIDGE, TN 37831-8243

DIM1/0317

CC

625
1210

SERIES CODE/SERIAL NO.	71	FILING DATE	05/25/94	TOTAL CLAIMS	2	EXAMINER AND GROUP ART UNIT	1102	DATE MAILED	03/17/95
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First Named Applicant	DATED,	JOHN D.
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TITLE OF INVENTION
AN ELECTRO-OPTICAL DEVICE INCLUDING A NITROGEN CONTAINING ELECTROLYTE
(AS AMENDED)

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
05747	429-127-000	173	UTILITY	NO	\$1210.00	05/19/95

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18 3

TL60730 07/20/95 08248935 13-1958 060 142 1,210.00CH
TL60731 07/20/95 08248935 13-1958 060 561 30.00CH

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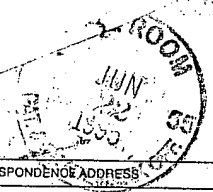
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The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.

(Authorized Signature)
Paul L. Smith

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MARTIN MARIETTA ENERGY SYSTEMS, INC.
P. O. BOX 2009
OAK RIDGE, TN 37831-8243

D1M1/0317

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
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09/24/95	09/24/95	002	BELL, B	09/17/95
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TITLE OF INVENTION: AN ELECTRO-OPTICAL DEVICE INCLUDING A NITROGEN CONTAINING ELECTROLYTE (AS AMENDED)

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
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05747	429-127-000	175	UTILITY	NO	\$1210.00	06/13/96
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TL60730	07/20/95	08248935	13-1958	060	142	1,210.00CH
TL60731	07/20/95	08248935	13-1958	060	361	30.00CH

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(Authorized Signature)
Paul L. Smith

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Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Box ISSUE FEE
Commissioner of Patents and Trademarks
Washington, D.C. 20231

on June 19, 1995
(Date)

Judith Hickman
(Name of person making deposit)

Judith Hickman
(Signature)

6/19/95
(Date)

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Burden Hour Statement: This form is estimated to take .2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Office of Information Systems, Patent and Trademark Office, Washington, D.C. 20231, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, (Project 0651-0033), Washington, D.C. 20503. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner of Patents and Trademarks, Box Issue Fee, Washington, DC 20231.

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

EDWARD L. GRAY
4770 THE PARKWAY ENERGY SYSTEMS, INC.
P. O. BOX 2000
PALM BEACH, FL 33480-0200

**NOTICE OF ALLOWANCE
AND ISSUE FEE DUE**

- ☐ Note attached communication from the Examiner
- ☐ This notice is issued in view of applicant's communication filed

SERIES CODE/SERIAL NO.	FILE FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
First Named Applicant				
TITLE OF				

TITLE OF
INVENTION

AN ELECTRO-OPTICAL DEVICE INCLUDING A NITROGEN-CONTAINING ELECTROLYTE
(C) (OFFICIAL)

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE

**THE APPLICATION IDENTIFIES ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.
PROSECUTION ON THE MERITS IS CLOSED.**

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

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If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:
- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the patent and Trademark Office of the change in status, or
 - B. If the Status is the same, pay the FEE DUE shown above.
- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.
- III. All communications regarding this application must give series code (or filing date), serial number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to contrary.
- If the SMALL ENTITY is shown as NO:
- A. Pay FEE DUE shown above, or
 - B. File verified statement of Small Entity Status before, or with, pay of 1/2 the FEE DUE shown above.

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